REMARKS

Claims 1-24 are pending in the instant application. Claims 1-12 are under examination. Claims 12-24 are withdrawn from consideration as being drawn to a non-elected invention.

I. Claim Rejections – 35 USC §102

Claims 1-7 and 11 are rejected under 35 U.S.C. § 102(b) as being anticipated by US Patent No. 5,595,890 to Newton *et al.* ('890). Applicants respectfully traverse.

Independent claim 1 is drawn to a method for detecting single nucleotide polymorphisms using two types of allele-specific primers. The primers are designed in such a way that the amount of amplified products are substantially the same for each heterozygous allele.

In contrast, the '890 reference discloses a method for detecting a variant nucleotide in a nucleic acid by using a diagnostic primer. The diagnostic primer is complementary to a diagnostic portion of the target nucleic acid suspected to contain a variant nucleotide. The terminal nucleotide of the diagnostic primer is either 1) complementary to the suspected variant nucleotide or 2) complementary to the corresponding normal nucleotide. The extension product and subsequent amplification product of the diagnostic primer is synthesized when the terminal nucleotide of the diagnostic primer is complementary to the corresponding nucleotide in the target base sequence. No extension product or subsequent amplification product is synthesized when the terminal nucleotide of the diagnostic primer is not complementary to the corresponding nucleotide in the target base sequence.

The primers in the '890 reference are designed to ensure that non-specific amplification is minimized. That is, when the terminal nucleotide is not complementary to the target, no

extension product should be synthesized. However, some non-complementary nucleotides do still result in hybridization. (See col. 11 at lines 52-55 of the '890 reference). Therefore, the primers of the '890 reference are designed with additional mismatches adjacent to the 3' end of the diagnostic primer to avoid artifactual results from a non-complementary target. (See col. 12 at lines 18-32 of the '890 reference). By deliberately introducing one or more additional mismatched residues within the diagnostic primer to destabilize the primer, non-specific binding during hybridization can be reduced. (See col. 12. at lines 22-26 of the '890 reference).

Independent claim 1, alternatively, is drawn to a method for detecting a single nucleotide polymorphism by designing a primer for each allele in a manner that results in amplified product that is substantially the same for each allele. This manner of primer design is different from the primer design of the '890 reference. The '890 reference teaches designing primers in a manner that prevents or decreases the amount of non-specific amplification product produced. In contrast, independent claim 1 is drawn to a primer design that ensures that the amount of amplification product resulting from both the normal and variant target is similar.

In order for the claims to be anticipated, each and every element of the claims must be inherently or expressly disclosed in a single reference. Because the '890 reference does not disclose the element of designing a primer in order for the amounts of amplification products resulting from each allele-specific primer to be substantially similar, the '890 reference does not anticipate independent claim 1. Because claims 2-7 and claim 11 depend from claim 1, and therefore, incorporate the novel features of claim 1, claims 2-7 and 11 are allowable, at least by virtue of dependency.

II. Claim Rejections – 35 USC §103(a)

Claims 8 and 9

The Examiner has rejected claims 8 and 9 as obvious over the '890 reference in view of Durward *et al.* (1998). Applicants respectfully traverse.

In order for the claims to be obvious, each and every element of the claims must be disclosed in the combined references. As described above, the '890 reference does not disclose, teach or suggest, the element of "allele-specific primers designed in such a way that the amounts of the amplified products of each of heterozygous alleles are substantially the same." Likewise, the Durward *et al.* reference does not disclose, teach or suggest this feature. Because claims 8 and 9 incorporate the features of claim 1, each and every element of claims 8 and 9 is not disclosed in the combined references. Therefore, claims 8 and 9 are not obvious over the '890 reference in view of Durward *et al.*

Claim 10

The Examiner also has rejected claim 10 as obvious over the '890 reference in view of Durward *et al.* (1998) and further in view of US Patent 5,935,520 to Fujisaki *et al.* ('520). Applicants respectfully traverse.

Claim 10 is dependent on claim 1 and, therefore, incorporates the features of claim 1 including "allele-specific primers designed in such a way that the amounts of the amplified products of each of heterozygous alleles are substantially the same." As discussed above, neither the '890 reference nor Durward *et al.* teach or suggest this element. Likewise, the '520 reference does not disclose this element. Because each and every element of claim 10 is not disclosed in

the combined references, claim 10 is not obvious over the '890 reference in view of Durward *et al.* and further in view of '520

If the Examiner has any questions concerning this application, the Examiner is requested to contact Marc S. Weiner, Reg. No. 32,181 at the telephone number of (703) 205-8000.

If necessary, the Commissioner is hereby authorized in this, concurrent, and future replies, to charge payment or credit any overpayment to Deposit Account No. 02-2448 for any additional fees required under 37 C.F.R. § 1.16 or under 37 C.F.R. § 1.17; particularly, extension of time fees.

In view of the above amendment, applicant believes the pending application is in condition for allowance.

Dated: May 15, 2006

Respectfully submitted,

By _____

Marc S. Weiner
Registration No.: 32,181
BIRCH, STEWART, KOLASCH & BIRCH, LLP
8110 Gatehouse Road
Suite 100 East
P.O. Box 747
Falls Church, Virginia 22040-0747
(703) 205-8000
Attorney for Applicant